

REMARKS

Claims 1-27 and 39-42 are pending in this application. By this Amendment, claim 12 is amended.

It is noted with appreciation that the Office Action objects to claims 3-11 and indicates that claims 12-27 and 39-42 are allowed.

The Office Action rejects claims 1, 2, 12 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,704,293 to Larsson et al. (hereinafter Larsson).

Claim 12 is amended herein for clarification purposes.

The present invention relates to a network architecture comprised of cluster heads and members. The cluster heads are organized into a tree structure with one cluster head selected as a gateway. The traffic flows directly between cluster heads and there are no forwarding nodes defined. By contrast, in Figure 3, Larsson discloses a net organization in terms of a piconet. Each piconet has a master node. In Larsson, the broadcast path goes from the master node of one piconet to a forwarding node and continues on to the master node of another piconet. This is totally different from the cluster head architecture of the present invention.

The Office Action refers to blocks 620 to 660 in Figure 6 of Larsson as allegedly being relevant to the subject matter of the claim 1. There, Larsson teaches that the received message is dropped if it is a duplicate. If it is not a duplicate, it is re-broadcasted to the neighbor nodes if the receiving node is not the destination. In other words, in Larsson any neighbor node rebroadcasts if the received message is not a duplicate. By contrast, in the present invention, a neighbor node may or may not rebroadcast depending upon its topology information even if the received message is not a duplicate.

To illustrate an application of the subject matter of the claimed invention, consider the following example of a four node network. Nodes 1, 2 and 3 are fully connected to each other, while node 4 is connected only to node 3. Including the self node, the neighbors of nodes 1, 2, 3 and 4, respectively are as follows. $N1=\{1,2,3\}$, $N2=\{1,2,3\}$, $N3=\{1,2,3,4\}$ and $N4=\{3,4\}$. If node 1 transmits, both node 2 and node 3 rebroadcasts according to Larsson's approach. On the other hand, according to the techniques of the present invention, only node 3 rebroadcasts. This is because the neighbors $\{1, 2, 3, 4\}$ of receiving communication unit $\{3\}$ are not all covered by the neighbors $\{1, 2, 3\}$ of another node, transmitting node 1. Node 2 does not rebroadcast because the neighbors $\{1, 2, 3\}$ of receiving communication unit $\{2\}$ are all covered by neighbors $\{1, 2, 3\}$ of another node, transmitting node 1.

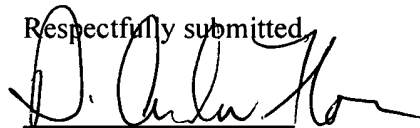
According to the present invention, if a node is selected as a cluster head, it always satisfies the rebroadcast criterion described in claim 1. To illustrate an application of the subject matter of claim 2, the same 4-node network example described above is used, where node 1 transmits and node 2 does not rebroadcast. Node 3 is selected as a cluster head. Node 2 does not retransmit if another communication unit, node 3, is configured to broadcast messages to a set of communication units {1,2,3,4}, the neighbors of node 3, that includes the first tier neighbors {1,2,3} of the receiving communication unit, node 2, and at least one another communication unit, node 4, that is not a neighbor of the receiving communication unit, node 2. In other words, the neighbors {1, 2, 3, 4} of node 3 include the neighbors {1, 2, 3} of node 2 and node 4 is not a neighbor of node 2. Larsson does not disclose such an algorithm.

For these reasons, it is respectfully requested that the rejection of claim 1, 2 and 12 based on Larsson be withdrawn.

It is respectfully submitted that all pending claims are in condition for allowance, and formal notice of such is solicited. If the Examiner has any questions, the Examiner is respectfully requested to contact the undersigned at the number listed below.

It is believed that no fees are required at this time. However, Applicant hereby petitions for any extension of time that may be necessary to maintain the pendency of this application. The Commissioner is hereby authorized to charge payment of any additional fees required for the above-identified application or credit any overpayment to Deposit Account No. 05-0460.

Respectfully submitted,



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